



PARTICLES 2D



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Particle Effects

- Particle effects

```
ParticleEffect effect = new ParticleEffect();
```

- A particle effect consists of some images that are moved around
- The images usually use additive blending and some pretty stunning results can be preoduced with only a few imagens.
- Particle effects are good for fire,explosions,smoke,etc.
- Particle effects are no different than Sprites, in fact they are sprites.

```
▪ public ParticleEmitter (ParticleEmitter emitter) {  
    sprites = new Array<Sprite>(emitter.sprites);  
    .....}
```



PARTICLES 2D

Particle Effects Pool

- Particle Effect Pool
 - Unfortunately garbage collection degrades the performance of your game, especially on the mobile platforms.
 - Use of the ParticleEffectPool completely mitigates garbage generation as you will be reusing your ParticleEffect when you are finished with them
 - In simple terms, grab a new object from the Pool, use it, when you are finished, return it so you can use it again



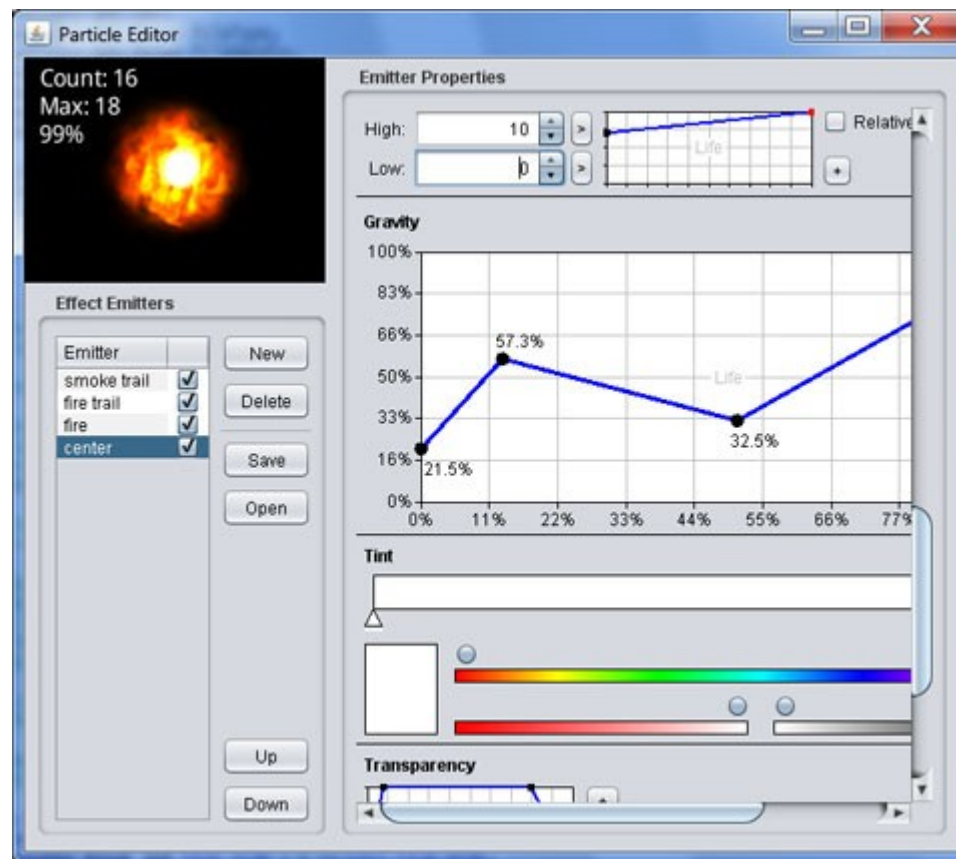
```
ParticleEffectPool bombEffectPool;  
Array<PooledEffect> effects = new Array();  
//Set up the particle effect that will act as the pool's template  
ParticleEffect bombEffect = new ParticleEffect();  
bombEffect.load(Gdx.files.internal("particles/bomb.p"), atlas);  
bombEffectPool = new ParticleEffectPool(bombEffect, 1, 2);  
  
// Create effect:  
PooledEffect effect = bombEffectPool.obtain();  
effect.setPosition(x, y);  
effects.add(effect);  
  
// Update and draw effects:  
for (int i = effects.size - 1; i >= 0; i--) {  
    PooledEffect effect = effects.get(i);  
    effect.draw(batch, delta);  
    if (effect.isComplete()) {  
        effect.free();  
        effects.removeIndex(i);  
    }  
}  
  
// Reset all effects:  
for (int i = effects.size - 1; i >= 0; i--)  
    effects.get(i).free(); //free all the effects back to the pool  
○ effects.clear(); //clear the current effects array
```



PARTICLES 2D

Particle Editor

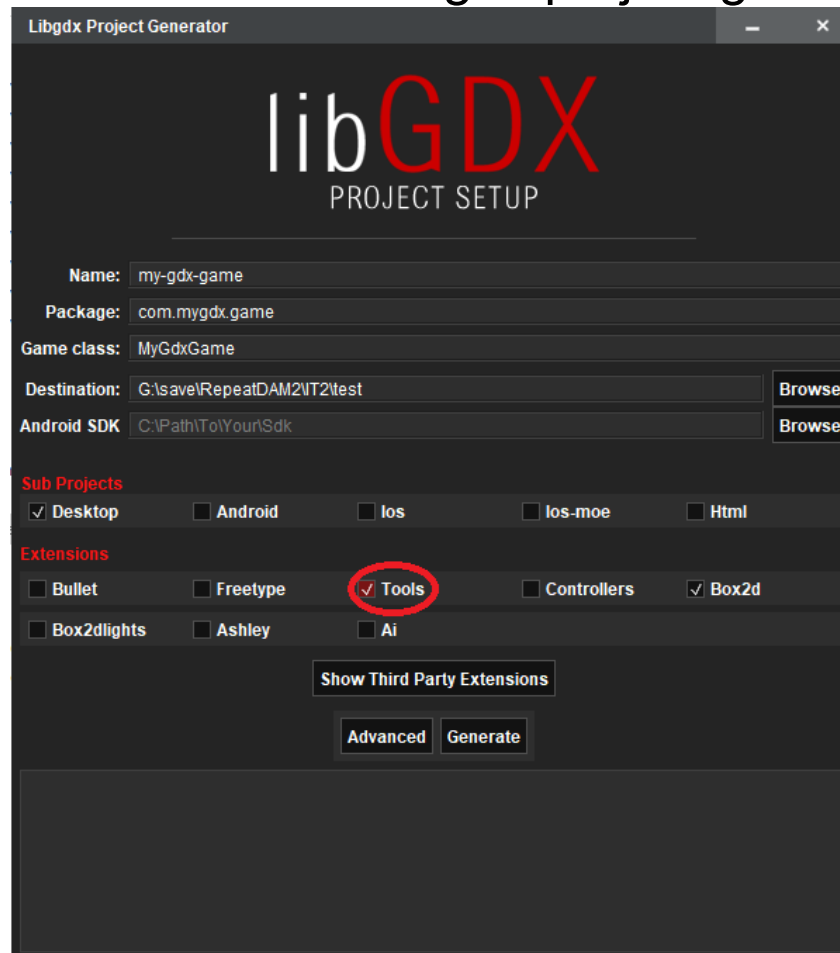
The libgdx 2D Particle Editor is a powerful tool for making particle effects.





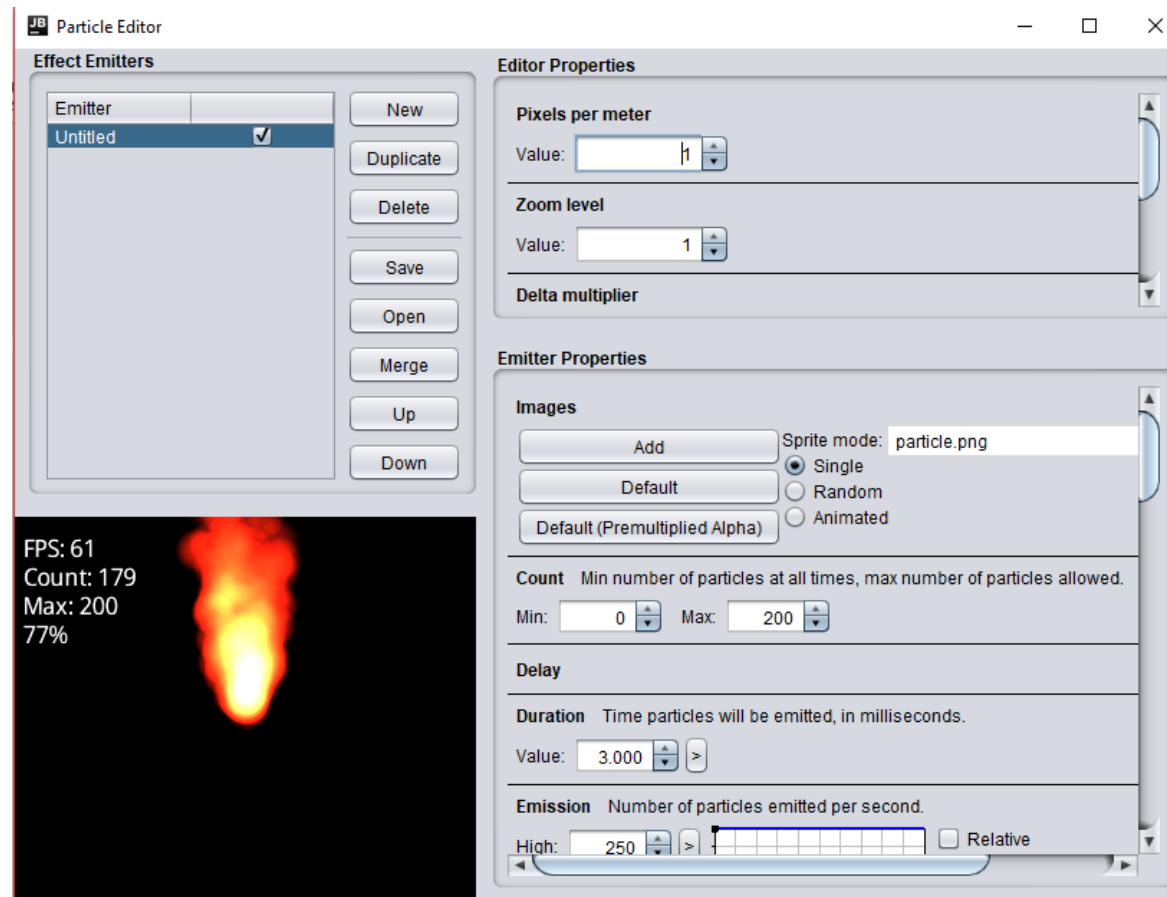
To use this particle editor we need..

- Activate the *Tool* check of our libgdx project generator





- Open our project in Android Studio
- In *Project* view go to
 - *External Libraries*→*gdx-tools-xxx*→*com.badlogic.gdx*→*tools*→*particleeditor*
 - *Execute the ParticleEditor java*





Briefly Explained The Most Important Features Of This Tool

- Delay: When an effect starts, this emitter will do nothing for this many milliseconds. This can be used to synchronize multiple emitters.
- Count: Controls the minimum number of particles that must always exist, and the maximum number of particles that can possibly exist
- Emission: How many particles will be emitted per second.
- Life: How long a single particle will live.
- Tint: The particle color.
- Size: The size of the particle.
- Rotation: The rotation of the particle.